

REMARKS/ARGUMENTS

Reexamination and reconsideration of this application as amended is requested. By this amendment, Claims 1, 14, 18, 23, and 24, have been amended. After this amendment, Claims 1-24 remain pending in this application.

Claim Rejections - 35 USC § 102

The Examiner rejected Claims 1-24 under 35 U.S.C. 102(e) as being anticipated by Suzuki et al. (U.S. Patent No. 6,539,461).

Applicants amended independent Claims 1, 14, 18, 23, and 24, to more clearly and distinctly recite the present invention. The amended independent Claims 1, 14, 18, 23, and 24, and all dependent claims depending therefrom, respectively, more clearly recite “selectively enabling the plurality of driving elements according to the residual capacity of the power supply unit for supplying the programming of the plurality of memory cells”. Support for the amended claim language may be found in the specification and claims as originally filed. For example, see page 5, lines 6-8, and lines 16-21, and see page 6, lines 1-4, and see page 9, lines 5-12. No new matter was added by the amendment.

The present invention relates to a non-volatile memory device, such as a flash E2PROM. In this context, the invention addresses the management of the program loads that are used to program the selected cells of the memory device. Particularly, the invention is aimed at overcoming the disadvantages that are caused by the limitation of the capacity of the charge pump that supplies the program loads.

The solution of the present invention is based on the idea of determining the residual capacity of the charge pump, so as to enable the program loads accordingly (see for example the specification on page 6, lines 5-12). For example, this result can be achieved by monitoring the

actual load of the charge pump (in order to estimate its residual capacity), and then enabling the program loads as soon as possible.

The proposed architecture self-adapts to the capacity of the charge-pump (so as to exploit the charge pump at its best). As a result, more memory cells can be programmed concurrently (without exceeding the capacity of the charge pump), thereby improving the programming speed of the memory device.

The cited document by Suzuki et al. relates to a completely different technical field. Indeed, this document specifically addresses computer systems, and more particularly techniques that are used for the backup of data into external storages (see column 1, lines 5-17). In this context, it is possible to detect a residual capacity of the power supply. When the residual capacity falls below a predetermined level, the content of a volatile storage is transferred to a non-volatile storage for its backup (see column 1, lines 17-25).

First of all, this solution completely differs from the presently claimed structure since Suzuki's structure relates to the management of a volatile storage. In any case, the information about the residual capacity of the power supply is not used during the normal operation of the storage, and more specifically it is clearly not used for the programming of the storage. Conversely, this information is only used to detect a critical condition of the volatile storage (which may impair its data retention). In this situation, the system does not perform any action on the volatile storage, but instead triggers the transfer of its content to the non-volatile storage.

On the other hand, the presently claimed invention, as recited for the amended Claims 1, 14, 18, 23, and 24, selectively enables the plurality of driving elements according to the residual capacity of the power supply unit for supplying the programming of the plurality of memory cells. This is very different than any teaching of Suzuki. Therefore, in view of the amendments and remarks above, Applicants believe that since Suzuki et al. do not teach, anticipate, or suggest, inter alia, the presently claimed "selectively enabling the plurality of driving elements

according to the residual capacity of the power supply unit for supplying the programming of the plurality of memory cells", the rejection of independent Claims 1, 14, 18, 23, and 24, under 35 U.S.C. 102(e) as being anticipated by Suzuki has been overcome. The Examiner should withdraw the rejection of these claims.

Claims 2-13, 15-17, and 19-22, depend from amended independent Claims 1, 14, 18, 23, and 24, respectively, either directly or by way of an intervening claim, and since dependent claims recite all of the limitations of the independent claim; it is believed that, therefore, the dependent Claims 2-13, 15-17, and 19-22, also recite in allowable form. Therefore, Applicant believes that the rejection of Claims 1-24, under 35 U.S.C. 102(e) as being anticipated by Suzuki et al. has been overcome. The Examiner should withdraw the rejection of these claims and allow these claims to issue.

Conclusion

The foregoing is submitted as full and complete response to the Official Action mailed February 10, 2005, and it is submitted that Claims 1-24 are in condition for allowance. Reconsideration of the rejection is requested. Allowance of Claims 1-24 is earnestly solicited.

No amendment made was related to the statutory requirements of patentability unless expressly stated herein. No amendment made was for the purpose of narrowing the scope of any claim, unless Applicant has argued herein that such amendment was made to distinguish over a particular reference or combination of references.

Applicant acknowledges the continuing duty of candor and good faith to disclose information known to be material to the examination of this application. In accordance with 37 CFR § 1.56, all such information is dutifully made of record. The foreseeable equivalents of any territory surrendered by amendment are limited to the territory taught by the information of record. No other territory afforded by the doctrine of equivalents is knowingly surrendered and everything else is unforeseeable at the time of this amendment by the Applicant and the attorneys.

The present application, after entry of this amendment, comprises twenty-four (24) claims, including five (5) independent claims. Applicants have previously paid for twenty-four (24) claims including five (5) independent claims. Applicants, therefore, believe that a fee for claims amendment is currently not due.

If the Examiner believes that there are any informalities that can be corrected by Examiner's amendment, or that in any way it would help expedite the prosecution of the patent application, a telephone call to the undersigned at (561) 989-9811 is respectfully solicited.


The Commissioner is hereby authorized to charge any fees that may be required or credit any overpayment to Deposit Account 50-1556.

In view of the preceding discussion, it is submitted that the claims are in condition for allowance. Reconsideration and re-examination is requested.

Respectfully submitted,

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